CLAIMS

We claim:

1. A modular optical detector system, comprising:

a first module, wherein said first module comprises;

a light source, and

optical elements for modifying light from said light source and directing the modified light onto a detection region and collecting radiation emitted therefrom; and

a second module, wherein said second module comprises detection means for receiving and analyzing the emitted radiation, and wherein said first module is in optical communication with said second module.

2. The modular optical detector system of claim 1, wherein said first module and said second module comprise a unitary structure.

3. The modular detector system of claim 2, wherein said first module is superposed on said second module.

4. The modular optical detector system of claim 1, wherein said light source is incorporated into an excitation source including collimating optics and filters.

5. The detector system of claim 4, wherein the excitation source is demountably engaged on a dovetail rail, whereby the components of the excitation source are maintained in a fixed and stable orientation.

6. The modular optical detector system of claim 1, wherein the light source is capable of providing light having a wavelength ranging from the infrared to

the ultraviolet.

7. The system of claim 6, wherein said light source includes lasers, light-emitting diodes, laser diodes, vertical cavity surface emitting lasers, vertical external cavity surface emitting lasers, or dipole pumped solid state lasers.

8. The system of claim 7, wherein said light source is a laser.

9. The system of claim 8, wherein said laser produces light having a wavelength of about 405 nm

10. The modular optical detector system of claim 1, wherein the optical elements are contained within a beam positioning block that provides for proper positioning of said optical elements with respect to a detector area.

11. The modular optical detector system of claim 1, wherein the optical elements include a beam steering mirror system.

12. The system of claim 11, wherein the beam steering mirror system comprises a 4 mirror system.

13. The system of claim 1, wherein the detection means comprises photomultiplier tubes, photodiodes, avalanche photodiodes, array detectors, charge-coupled devices, or photosensitive detectors.